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Peer Review and Pay-to-Publish: The World Turned Upside Down?

by **Michael A Mabe** (Director, Academic Relations, Elsevier, Langford Lane, Kidlington, Oxford OX5 1GB, and Visiting Professor, Dept. Information Science, City University, London) <m.mabe@elsevier.com>

Listen to me and you shall hear, news hath not been this thousand year:

Since Herod, Caesar, and many more, you never heard the like before.

Holy-dayes are despis'd, new fashions are devis'd.

Old Christmas is kickt out of Town.

Yet let's be content, and the times lament, you see the world turn'd upside down.

[Popular ballade from English Civil War c. 1640s]

So legend has it was the song played when the defeated British surrendered to **Washington** at Yorktown at the conclusion of the revolutionary war on October 19th 1781. The current hubbub in journal publishing, in favour of a drastic revolution from a reader-pays to an author-pays business model, is not yet a victory or defeat parade but could legitimately be viewed as a "World Turned Upside Down" moment — in all senses of that phrase. However, the inversion of who pays may turn out to be less of a panacea and more of a poison to the many delicate relationships involved in the journal publishing process, not least the efficacy of peer review as a guarantee of quality.

I have worked in scholarly publishing for nearly 25 years. In that time, the journal — like **Mark Twain** — has frequently been declared dead only to be discovered to be still alive and kicking, while its much vaunted replacements wither on the vine. Proponents of these alternative futures almost universally overlook the importance of the journal system to the intellectual and personal requirements of scholars, past, present and future. Whether digital or on paper, as a means of registering, validating, disseminating and archiving scholarly articles, the journal is still very much alive.

The latest challenge comes from the **Open Access** movement. It is not an attack on the principles of the journal system per se but an attempt to create an entirely different approach to its philosophy and economics: at its heart lies a pay-to-publish rather than a pay-to-read business model. The fundamental creed of **Open Access** is that all information should be free at the point of use, that the internet should be a universal library free for all mankind. Such al-

truistic ideals are difficult to disagree with (and as some commentators have ruefully remarked, contrary views in this debate are too often regarded as heretical rather than critical¹), nevertheless I believe that this dream, like so many other utopias, could lead to a nightmare outcome for authors, readers, librarians and publishers.

The drivers behind the pay-to-publish movement are clear if confused. There has been and continues to be a crisis of funding affecting university libraries. In real terms the proportion of university spending devoted to the library has been allowed to fall at the same time as the scholarly literature has grown, both in terms of journal titles and papers.^{2,3} Although not widely discussed, the pay-to-publish model does have one major advantage among its many downsides: it automatically links research activity to literature provision through the mechanism of charging authors to publish. In this respect, if no other, it goes to the heart of the library-funding crisis, or it would if a realistic economic model prevailed among its proponents. In addition, the digital transition — still far from complete — continues to redefine the roles and fundamental processes of all players in the information chain. All these factors play their part in creating a generalised dissatisfaction with the status quo, and **Open Access** has acted like a lightning rod for all these discontents. It is a symptom, not a cure.

The principal goal of **Open Access** is simple:



access for all. The means to achieve it is the pay-to-publish model and it is frequently asserted that such models are automatically going to be cheaper and save libraries money.

At the heart of these arguments lies the idea that if something is non-corporeal then it must be free, or at the very least substantially cheaper. While there are some savings in a fully electronic world, we are far from that position; a significant proportion of journal customers still expect paper versions of journals as well as electronic ones. Even in a fully electronic world, it appears that any savings are not likely to be nearly as great as many hope and electronic delivery introduces some new costs not present in the paper world. At its core, the fundamentals of the publishing process remain unaltered by the digital transition: journal editors still have to be found, and they and their editorial offices supported in the acquisition and peer review of journal content; that content, albeit supplied in electronic form, still has to be unified and made consistent with addition of tags and other elements that allow it to be fully functional electronically.


Going electronic simplifies reproduction and distribution but there still has to be a master file or "first copy" from which both the digital and the print versions derive. The economics of these core processes have been extensively studied: first copy costs per article are reckoned by **Odlyzko** and **Tenopir** and **King** (and most recently **John Cox Associates**) at \$3000 to \$4000.⁴ The economic challenge for the pay-to-

publish model is to devise a method that yields revenues at this level without putting authors off, otherwise the future viability of their alternative is in doubt. Yet pay-to-publish publishers are currently charging authors only \$500 to \$1500, a shortfall of \$2500 to \$3500 per article. These publication charges assume that every published author can and does pay; and if the proportion that doesn't pay rises so will the average charge.

Anticipating these criticisms, **Open Access** advocates suggest that novel revenue-raising approaches are available to supplement publication payments and that these are not fully exploited. They believe advertising, sponsorship and charitable donations can supplement low article charges and allow all barriers to access to be removed. The scale of subsidy required to do this should not be underestimated. Each year about 1.2-1.4 million articles are published: given the shortfalls per article above, are annual fees from advertising or sponsorships or donations of the order of \$2-3 billion available?

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forums^{2,42} Such enhancements to conventional peer review need not, however, be limited to features that some may view as simple extensions of the traditional model. In addition to "ideal" conversations, metrics such as access statistics, as well as citing and linking, can also offer impartial indicators of valid and significant scholarship in all its forms, at any and all stages. 

Column Editor's Note: This article is based on "Alternative Peer Review: Quality Management for 21st Century Scholarship," an invited presentation delivered at the Workshop on Peer Review in the Age of Open Archives held May 23-24, 2003 at the International School for Advanced Studies (SISSA), Trieste, Italy. A copy of the corrected and revised PowerPoint presentation is available at <http://www.public.iastate.edu/~gerrymck/APR.ppt>.

I find the assumption that the traditional publishing sector has missed any advertising opportunities difficult to credit. Advertising revenues are only significant in a very specific subset of learned journals and even then they cannot cover all the costs, as the *British Medical Journal's* recent experience has shown. For pure research journals, which are the majority of the 16,000 peer-reviewed titles that currently publish, advertising plays little or no role at all. And then there is sponsorship and charitable donation. Is it conceivable that the learned societies have not been able to fully exploit such sources as are available? Could donations really support a publishing system year-in year-out? And perhaps more fundamentally, do we think it right or desirable that patronage supports publishing? What effects might there be on intellectual freedom?

Most scientific researchers agree that peer review is the most important aspect of the journal system. The standing of a journal's peer review is probably the most significant factor in assessing its quality; appearing in a quality outlet is important for authors in gaining recognition and reward and it is vital to readers who are faced with the need to discriminate between a growing volume of material to consult and limited time for consultation.

One of the basic principles of traditional publishing is that the quality barrier of peer review is the **only** obstacle that an author's article has to surmount in order to be published. Popularity, topicality, saleability, nationality or the author's affiliation — none of these have any bearing on whether an article will be published. Author payment for publication on the other hand, a kind of bizarre vanity publishing, introduces a whole series of conflicts of interest between authors, between author and editor, editor and publisher and so on.

For a financially failing journal, the temptation for pay-to-publish publishers and editors will be to move from a presumption to reject papers to one of acceptance. As the only source of income for these journals will be publication fees, publishing more articles will generate more revenue; and this is most easily done by accepting a higher proportion of the papers submitted. As a higher proportion of papers get accepted, inevitably the quality of the journal will decline.

Authors from poorer institutions or countries (between 25 and 50% of all authors⁵) and those without access to funds to publish will be excluded irrespective of the scholarly merits of their articles, unlike at present where they have no barriers to publishing other than quality. Yet at the same time, the large and wealthy research corporations (drugs and chemical companies, computer component manufacturers etc.) that currently pay for about 10-15% of subscriptions will have them all for free and have no difficulties paying to publish papers that support their goals.

The current barriers of needing to satisfy a minimum potential audience of (paying) read-


ers to ensure the survival of new journals starts will vanish; journals will be viable from the moment they have authors to publish — with no check on their proliferation.

Within the university sector, the richer research universities will see their costs for publishing greatly outstripping their current serials budgets while the smaller, poorer institutions will be left with surpluses. How will these structural imbalances be rectified? Research departments will claim the entirety of the library serials budget and administer it on behalf of their authors who want to publish, exercising great power and influence over who shall be funded and where they will be allowed to publish. Authors who are already concerned about the influence of their institution on what they research and whether it gets supported will now have an even greater challenge to their academic freedom.

Currently all the traditional publishers have a responsibility to past, present and future scholars. The long-term availability and preservation of scientific and medical information is crucial to the future of science. The business model of traditional publishers, the subscription or site licence, ensures that the scholarly community has continuing access to their (and our) intellectual heritage. Being a guardian of the "minutes of science" means much more than simply organising peer review and posting the final version of an article online; it means a commitment to support and supply that article to all future readers too, in a form they can easily access on current software and hardware platforms. It is difficult to see how a system based on single one-off payments could fund preservation for (potentially) perpetuity.

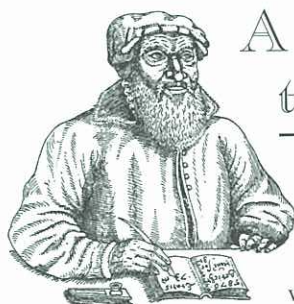
The current journal business model has many advantages. It is self-sustaining and allows for investment for the future without government grants, charity or patronage. It protects academic deliberations from economic

ones, preserving the nature of peer review. It is highly adapted to the requirements of authors and readers, having evolved over more than three hundred years to serve each niche research community, allowing the creation of new journals that nurture and support new groupings of scholars and new fields of endeavour. It has been the basis for investment in the future of publishing. Hundreds of millions of dollars have been invested in the transformation of a paper-based system to an essentially fully electronic one, in less than ten years, with all the efficiencies of speed of access and searching that save researchers valuable time. Access and use of information have soared while cost per use has plummeted. These are significant gains.

With the continuing development of new pricing models we are seeing the evolution of the system away from its annual subscription roots towards a utility model, where access to all the literature by all scholars in a region or nation are possible. This goal, universal scholarly access while retaining the freedom of authors to publish where they want, is surely worth striving for. And we don't need The World Turned Upside Down to get it. 

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A Primer on Open Access to Science and Scholarship

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The scientific journal was invented in 1665. For readers, the new form of publication surpassed books for learning quickly about the recent work of others. For authors, it surpassed books for sharing new work quickly with the wider world and, above all, for establishing priority over other scientists working on the same problem. Because authors were rewarded in these strong, intangible ways, they accepted the fact that journals couldn't afford to pay them. Over time, journal revenue grew but authors continued in the tradition of writing articles for impact, not for

money. Scholars may write books and software for money, but for journal articles they are amply paid by advancing knowledge and advancing their careers.

The tradition that started in 1665 continues today and makes the scientific or scholarly journal article nearly unique in the landscape of intellectual property. It's not rare for authors to earn nothing from their work. But it is rare and peculiar for authors to earn nothing regardless of the sales of their work. It's rare and peculiar for authors to submit their work voluntarily, even eagerly, to publishers who will not buy it or pay royalties. One measure of its rarity is that our

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